



Express Mail No. EV522672885US

PTO/SB/08a/b (07-05)

Approved for use through 07/31/2008. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

U.S. Patent and Trademark Office  
Substitute for form 1449A/B/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

1

of

4

### Complete If Known

Application Number	10/621,037-Conf. #8893
Filing Date	July 15, 2003
First Named Inventor	Randy A. Harris
Art Unit	3652
Examiner Name	D. W. Underwood

Attorney Docket Number 291958222US1

### U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-09/679,928	10-05-2000		
Willa		US-1,526,644	02-17-1925		
		US-1,881,713	10-11-1932		
		US-2,256,274	09-16-1941		
		US-2002/0006322	01-17-2002	Perlov et al.	
		US-2002/0008037	01-24-2002	Wilson et al.	
		US-2002/0125141	09-12-2002	Wilson et al.	
		US-2002/0139678	10-03-2002	Wilson et al.	
		US-2002/0179863	12-05-2002	Harris et al.	
		US-3,968,885	07/1976	Hassan et al.	
		US-4,046,105	09-06-1977	Gomez	
		US-4,304,641	12-08-1981	Grandia et al.	
		US-4,431,361	02-14-1984	Bayne	
		US-4,449,885	05-22-1984	Hertel et al.	
		US-4,495,453	01-22-1985	Inaba et al.	
		US-4,566,847	01-28-1986	Maeda et al.	
		US-4,634,503	01-06-1987	Nogavich	
		US-4,648,944	03-10-1987	George et al.	
		US-4,693,017	09-15-1987	Oehler et al.	
		US-4,761,214	08-02-1988	Hinman	
		US-4,800,818	01-31-1989	Kawaguchi et al.	
		US-4,828,654	05-09-1989	Reed	
		US-4,864,239	09-05-1989	Casarcia et al.	
		US-4,902,398	02-20-1990	Homstad	
		US-4,924,890	05-15-1990	Giles et al.	
		US-4,949,671	08-21-1990	Davis et al.	
		US-4,962,726	10-16-1990	Matsushita et al.	
		US-4,988,533	01-29-1991	Freeman et al.	
		US-5,000,827	03-19-1991	Schuster et al.	
		US-5,026,239	06-25-1991	Chiba et al.	
		US-5,051,988	09-24-1991	Kawahigashi et al.	
		US-5,055,036	10-08-1991	Asano et al.	
		US-5,061,144	10-29-1991	Akimoto et al.	
		US-5,082,364	01-21-1992	Russell	
		US-5,110,248	05-05-1992	Asano et al.	
		US-5,125,784	06-30-1992	Asano	
		US-5,128,912	07/1992	Hug et al.	
		US-5,135,636	08-04-1992	Yee et al.	
		US-5,138,973	08-18-1992	Davis et al.	
		US-5,156,174	10-20-1992	Thompson et al.	
new		US-5,168,886	12-08-1992	Thompson et al.	

Examiner Signature	Underwood	Date Considered	01/13/06
--------------------	-----------	-----------------	----------

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/B/PTO

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

2

of

4.

## Complete If Known

Application Number	10/621,037-Conf. #8893
Filing Date	July 15, 2003
First Named Inventor	Randy A. Harris
Art Unit	3652
Examiner Name	D. W. Underwood

Attorney Docket Number 291958222US1

US-5,168,887	12-08-1992	Thompson et al.
US-5,172,803	12-22-1992	Lewin
US-5,174,045	12-29-1992	Thompson et al.
US-5,178,639	01-12-1993	Nishi
US-5,180,273	01-19-1993	Sakaya et al.
US-5,183,377	02-02-1993	Becker et al.
US-5,186,594	02-16-1993	Toshima et al.
US-5,217,586	06-08-1993	Datta et al.
US-5,222,310	06-29-1993	Thompson et al.
US-5,227,041	07-13-1993	Brogden et al.
US-5,232,511	08-03-1993	Bergman
US-5,235,995	08-17-1993	Bergman et al.
US-5,238,500	08-24-1993	Bergman
US-5,252,137	10-12-1993	Tateyama et al.
US-5,256,274	10-26-1993	Poris
US-5,301,700	04-12-1994	Kamikawa et al.
US-5,332,445	07-26-1994	Bergman
US-5,344,491	09-06-1994	Katou
US-5,368,711	11-29-1994	Poris
US-5,376,176	12-27-1994	Kuriyama
US-5,377,708	01-03-1995	Bergman et al.
US-5,388,945	02-14-1995	Garric et al.
US-5,442,416	08-15-1995	Tateyama et al.
US-5,445,484	08-29-1995	Kato et al.
US-5,460,478	10-24-1995	Akimoto et al.
US-5,464,313	11-07-1995	Ohsawa
US-5,500,081	03-19-1996	Bergman
US-5,527,390	06-18-1996	Ono et al.
US-5,544,421	08-13-1996	Thompson et al.
US-5,571,325	11-05-1996	Ueyama et al.
US-5,575,611	11-19-1996	Thompson et al.
US-5,639,206	06-17-1997	Oda et al.
US-5,658,387	08-19-1997	Reardon et al.
US-5,660,517	08-26-1997	Thompson et al.
US-5,664,337	09-09-1997	Davis et al.
US-5,670,034	09-23-1997	Lowery
US-5,678,320	10-21-1997	Thompson et al.
US-5,681,392	10-28-1997	Swain
US-5,684,713	11-04-1997	Asada et al.
US-5,700,127	12-23-1997	Harada et al.
US-5,723,028	03-03-1998	Poris
US-5,746,565	05/1998	Tepolt
US-5,754,842	05-19-1998	Minagawa
US-5,762,444	06-09-1998	Giannelli
US-5,762,751	06-09-1998	Bleck et al.

Examiner Signature	Underwood	Date Considered	01/13/06
--------------------	-----------	-----------------	----------

Substitute for form 1449A/B/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

3

of

4

Complete If Known	
Application Number	10/621,037-Conf. #8893
Filing Date	July 15, 2003
First Named Inventor	Randy A. Harris
Art Unit	3652
Examiner Name	D. W. Underwood
Attorney Docket Number	291958222US1

WIL	US-5,772,386	06-30-1998	Mages et al.
	US-5,785,826	07-28-1998	Greenspan
	US-5,947,718	09-07-1999	Weaver
	US-5,980,706	11-09-1999	Bleck et al.
	US-5,985,126	11-16-1999	Bleck et al.
	US-5,989,397	11-23-1999	Laube et al.
	US-5,999,886	12-07-1999	Martin et al.
	US-6,004,828	12-21-1999	Hanson
	US-6,027,631	02-22-2000	Broadbent
	US-6,028,986	02-22-2000	Song
	US-6,030,208	02-29-2000	Williams et al.
	US-6,042,324	03-28-2000	Aggarwal et al.
	US-6,071,059	06-06-2000	Mages et al.
	US-6,074,544	06-13-2000	Reid et al.
	US-6,090,260	07-18-2000	Inoue et al.
	US-6,091,498	07-18-2000	Hanson et al.
	US-6,110,346	08-29-2000	Reid et al.
	US-6,151,532	11-21-2000	Barone et al.
	US-6,156,167	12-05-2000	Patton et al.
	US-6,159,354	12-12-2000	Contolini et al.
	US-6,162,344	12-19-2000	Reid et al.
	US-6,162,488	12-19-2000	Gevelber et al.
	US-6,168,695	01-02-2001	Woodruff et al.
	US-6,179,983	01-30-2001	Reid et al.
	US-6,188,323	02-13-2001	Rosenquist et al.
	US-6,193,859	02-27-2001	Contolini et al.
	US-6,199,301	03-13-2001	Wallace
	US-6,228,232	05-08-2001	Woodruff et al.
	US-6,234,738	05-22-2001	Kimata et al.
	US-6,318,951	11-20-2001	Schmidt et al.
	US-6,322,112	11-27-2001	Duncan
	US-6,322,677	11-27-2001	Woodruff et al.
	US-6,342,137	01-29-2002	Woodruff et al.
	US-6,391,166	05-21-2002	Wang
	US-6,413,359	07-02-2002	Keller
	US-6,654,122	11-25-2003	Hanson
	US-6,672,820	01-06-2004	Hanson
WIL	US-60/206,663	05-24-2000	

### FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>2</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
WIL		EP-0452939	10-23-1991	Applied Materials, Inc.		
WIL		EP-0582019	02-09-1994	IBM		
Examiner Signature	Underwood			Date Considered	01/13/06	

Substitute for form 1449A/B/PTO				Complete If Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>				Application Number	10/621,037-Conf. #8893
Sheet	4	of	4	Filing Date	July 15, 2003
				First Named Inventor	Randy A. Harris
				Art Unit	3652
				Examiner Name	D. W. Underwood
				Attorney Docket Number	291958222US1

initial	EP-0047132	07-03-1985	Heraeus Quarzschmelze		
1	EP-0544311	06-02-1993	Dainippon Screen Mfg.		
	GB-2217107A	03-23-1989	Canon Kabushiki Kaisha		
	JP-1048442	02-22-1989	Texas Instr Japan		
	JP-4144150	05-18-1992	Oki Electric Ind Co Ltd		
	JP-5146984	06-15-1993	Murata Mach Ltd.		
	JP-5211224	08-20-1993	Texan Instr Japan		
	WO-00/61498	10-19-2000	Wilson et al.		
	WO-01/90434	11-29-2001	Semitool, Inc.		
	WO-95/06326	03-02-1995	Semitool, Inc.		
	WO-02/097165	12-05-2002	Semitool Inc.		
	WO-00/02808	01-20-2000	Semitool, Inc.		
	WO-00/61837	10-19-2000	Semitool		
WMA	WO-02/099165	12-12-2002	Semitool Inc.		

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. \*CITE NO.: Those application(s) which are marked with an single asterisk (\*) next to the Cite No. are not supplied (under 37 CFR 1.98(a)(2)(iii)) because that application was filed after June 30, 2003 or is available in the IFW. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

<b>NON PATENT LITERATURE DOCUMENTS</b>					
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			
initial		LEE, Tien-Yu Tom, et al., "Application of a CFD Root in Designing a Fountain Plating Cell for Uniform Bump Plating of Semiconductor Wafers," IEEE Transactions on Components, Packaging and Manufacturing Technology, Part B., Feb 1996, pp 131-137, Vol. 19, No. 1, IEEE			
		LOWENHEIM, Frederick, A., "Electroplating," 1978, pp 416-425, McGraw-Hill, Inc.			
		RITTER, G., "Two-and Three-Dimensional Numerical Modeling of Copper Electroplating for Advanced ULSI Metallization," Basic Models to Enhance Reliability, June 1999, pp 1-13, E-MRS Conference Symposium, France			
		Semitool, Inc., VTF 1500 Vertical Furnace Brochure, 1992, 1 pg			
initial		SMIF-INS 2150/220/R150, <a href="http://www.asyst.com/prod/smif/smit_INS.html">http://www.asyst.com/prod/smif/smit_INS.html</a> ; 1 pg; 2001 Asyst Technologies [accessed March 26, 2001]			

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature	Underwood	Date Considered	01/13/06
--------------------	-----------	-----------------	----------